

IN THE CLAIMS:

Claim 1. (currently amended) An ink jet recording ink containing water and a colorant comprising a pigment encapsulated by a polymer having a carboxyl group,
wherein said ink jet recording ink further contains at least methylisothiazolone and octylisothiazolone, wherein the methylisothiazolone content is at least 10 ppm and no more than 500 ppm provided that the methylisothiazolone content can be up to 800 ppm if the octylisothiazolone content is 200 ppm or less; the octylisothiazolone content is at least 100 ppm and no more than 800 ppm, and the combined amount of methylisothiazolone and octylisothiazolone is at least 110 ppm and no more than 1300 ppm, and wherein the methylisothiazolone content is at least 10 ppm and is an amount that, in consideration of the octylisothiazolone content and the combined amount of methylisothiazolone and octylisothiazolone, would result in the ink having a final viscosity after storage in a stoppered vial for 30 days at 70°C that is no more than 1.2 times greater than viscosity of the ink before the storage.

Claim 2. (original) The ink jet recording ink according to Claim 1, wherein the ink jet recording ink further contains macromolecular fine particles and a humectant, the combined amount of the polymer and the macromolecular fine particles is at least 1%, and the humectant content is at least 5%.

Claim 3. (currently amended) The ink jet recording ink according to Claim 1, wherein the combined amount of the methylisothiazolone and the octylisothiazolone is at least 110 ppm and no more than 1000 ppm.

Claim 4. (previously presented) The ink jet recording ink according to Claim 1, wherein the methylisothiazolone content is no more than 500 ppm.

Claim 5 (previously presented) The ink jet recording ink according to claim 1, wherein the pH of the ink jet recording ink is from 6 to 10.

Claim 6. (previously presented) The ink jet recording ink according to claim 1, wherein the ink jet recording ink further contains a polyhydric alcohol and a substance being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher.

Claim 7. (previously presented) The ink jet recording ink according to Claim 6, wherein the being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher is at least one or more types of substance selected from the group consisting of acetylene glycol-based surfactants, acetylene alcohol-based surfactants, silicon-based surfactants, glycol ethers, and 1,2 alkylene glycols.

Claim 8. (previously presented) The ink jet recording ink according to claim 1, wherein the colorant is an organic pigment or an inorganic pigment.

Claim 9. (previously presented) The ink jet recording ink according to claim 2, wherein the pH of the ink jet recording ink is from 6 to 10.

Claim 10. (previously presented) The ink jet recording ink according to claim 3, wherein the pH of the ink jet recording ink is from 6 to 10.

Claim 11. (previously presented) The ink jet recording ink according to claim 4, wherein the pH of the ink jet recording ink is from 6 to 10.

Claim 12. (previously presented) The ink jet recording ink according to claim 2, wherein the ink jet recording ink further contains a polyhydric alcohol and a substance being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher.

Claim 13. (previously presented) The ink jet recording ink according to claim 3, wherein the ink jet recording ink further contains a polyhydric alcohol and a substance being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher.

Claim 14. (previously presented) The ink jet recording ink according to claim 4, wherein the ink jet recording ink further contains a polyhydric alcohol and a substance being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher.

Claim 15. (previously presented) The ink jet recording ink according to claim 12, wherein the being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher is at least one or more types of substance selected from the group consisting of acetylene glycol-based surfactants, acetylene alcohol-based surfactants, silicon-based surfactants, glycol ethers, and 1,2 alkylene glycols.

Claim 16. (previously presented) The ink jet recording ink according to claim 13, wherein the being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher is at least one or more types of substance selected from the group consisting of acetylene glycol-based surfactants, acetylene alcohol-based surfactants, silicon-based surfactants, glycol ethers, and 1,2 alkylene glycols.

Claim 17. (previously presented) The ink jet recording ink according to claim 14, wherein the being capable of lowering the dynamic surface tension of the ink to 40 mN/m or less as measured by the maximum bubble pressure method at the condition of 5 Hz or higher is at least

one or more types of substance selected from the group consisting of acetylene glycol-based surfactants, acetylene alcohol-based surfactants, silicon-based surfactants, glycol ethers, and 1,2 alkylene glycols.

Claim 18. (previously presented) The ink jet recording ink according to claim 2, wherein the colorant is an organic pigment or an inorganic pigment.

Claim 19. (previously presented) The ink jet recording ink according to claim 3, wherein the colorant is an organic pigment or an inorganic pigment.

Claim 20. (previously presented) The ink jet recording ink according to claim 4, wherein the colorant is an organic pigment or an inorganic pigment.

Claim 21 (previously presented) The ink jet recording ink according to claim 1, wherein the methylisothiazolone and octylisothiazolone are present in the ink in respective amounts such that the ink has a better storage stability than the ink without the methylisothiazolone or octylisothiazolone.

Claim 22 (new). The ink jet recording ink according to claim 1, wherein the methylisothiazolone content is an amount that, in consideration of the octylisothiazolone content and the combined amount of methylisothiazolone and octylisothiazolone, would result in the ink having a final viscosity after storage in a stoppered vial for 30 days at 70°C that is no more than

1.1 times greater than an initial viscosity of the ink before the storage.

Claim 23 (new). A method for improving storage stability of an ink comprising water and a colorant, wherein the colorant comprises a pigment encapsulated by a polymer having a carboxyl group, the method comprising the step of incorporating into the ink methylisothiazolone and octylisothiazolone such that the octylisothiazolone content of the ink is at least 100 ppm and no more than 800 ppm, the combined amount of methylisothiazolone and octylisothiazolone is at least 110 ppm and no more than 1300 ppm, and the methylisothiazolone content is at least 10 ppm and is an amount that, in consideration of the octylisothiazolone content and the combined amount of methylisothiazolone and octylisothiazolone, would result in the ink having a final viscosity after storage in a stoppered vial for 30 days at 70°C that is no more than 1.2 times greater than an initial viscosity of the ink before the storage.

Claim 24 (new). The method according to claim 23, wherein the methylisothiazolone content is no more than 500 ppm.